MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2017/2018

BSE2414 – SOFTWARE ENGINEERING FUNDAMENTALS

(All Section / Groups)

23 OCTOBER 2017
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 4 pages with 4 Questions only (including cover page).
2. Attempt **ALL FOUR** questions.
3. The distribution of the marks for each question is given.
4. Please write all your answers in the Answer Booklet provided.

Attempt **ALL FOUR** questions.

QUESTION 1

Based on the scenario given below, answer the following questions.

In Malaysia, Giant is synonymous with everyday low prices, big variety, great value and recognised for offering the most vibrant, comfortable and complete shopping environment. Giant, which turned 65 in 2009, pioneered the concept of modern supermarket shopping – buying everyday groceries, fresh produce and fresh foods under one roof and in a hygienic environment. As the pioneer, Giant sets the pace and standards for the industry with innovative marketing, store design and product pricing and variety. For the consumer, Giant has thrown its weight fully behind the Malaysian Government's programme to create smart consumers of Malaysians through continuous marketing innovations, which help them seek out the best value deals. However, Giant wants to develop a software on its own to create smart consumers. The application will be comprising of consumer's feedback, complaints, and many other features. Their requirements are very well understood and it is going to be a large scale software where it has to accommodate all consumer's demands. Furthermore, Giant have to be very careful in producing this application as it involves a large number of consumers in Malaysia.

a) Select the most appropriate approach that is suitable for the system mentioned above. Justify your answer. **(5 marks)**

b) Select the most appropriate general software process model that might be used as a basis for managing the development of the system mentioned above. Justify your answer. **(5 marks)**

c) Discuss all the stages involved in the model suggested in (b). **(15 marks)**

(Total 25 marks)

Continued...

QUESTION 2

Using the information in table given below, assuming that the project team will work a standard working week (5 working days in 1 week) and that all tasks will start as soon as possible.

Task	Description	Duration (days)	Dependencies
A	Requirement Analysis	5	None
B	System Design	15	A
C	Programming	25	B
D	Telcom	15	B
E	Hardware installation	30	B
F	Integration	10	C,D
G	System Testing	10	E,F
H	Training/Support	5	G
I	Handover/Go Live	5	H

a) Define project scheduling. **(2 marks)**

b) Draw activity network diagram. **(10 marks)**

c) Define **ANY ONE** of the graphical visualization of project schedules. **(3 marks)**

d) Determine the critical path of the project. Mention in number of days and number of weeks. Show the method of working. **(10 marks)**

(Total 25 marks)

QUESTION 3

a) Differentiate between functional requirements and non-functional requirements. **(6 marks)**

b) The detail and rigor of a model depend on how you intend to use it. There are **THREE (3)** ways in which graphical models are commonly used. Explain each of them in detail. **(9 marks)**

Continued...

c) Draw a use case diagram based on the scenario given below.

A lecturer is entering into the examination hall and distributes the exam papers to the students. He reads out the rules and regulations of the examination. Students start answering the examination. Once the exam is over, the lecturer collects the exam paper and marks all the paper by himself. Then, he records all the marks and returns the answer sheets back to the students. A question and answering session begins to discuss the exam paper and finally he collects the exam paper from the students as it is a part of the university rules.

(10 marks)

(Total 25 marks)

QUESTION 4

Based on the scenario given below, answer the following questions.

Legacy systems are socio-technical computer-based systems that have been developed in the past, often using older or obsolete technology. These systems include not only hardware and software but also legacy processes and procedures—old ways of doing things that are difficult to change because they rely on legacy software. Changes to one part of the system inevitably involve changes to other components, Legacy systems are often business-critical systems. They are maintained because it is too risky to replace them. For example, for most banks the customer accounting system was one of their earliest systems. Organisational policies and procedures may rely on this system. If the bank were to scrap and replace the customer accounting software (which may run on expensive mainframe hardware) then there would be a serious business risk if the replacement system did not work properly. Furthermore, existing procedures would have to change, and this may upset the people in the organisation and cause difficulties with the bank's auditors.

a) Why it is expensive and risky to replace legacy systems with new systems? Explain any **THREE (3)** reasons. **(9 marks)**

b) Why legacy systems are expensive to maintain? Explain any **FOUR (4)** reasons. **(10 marks)**

c) Discuss any **THREE (3)** components of legacy system. **(6 marks)**

(Total 25 marks)

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